



Springer

Call for Papers

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Important Dates

Intent to submit	31 Dec 2024
Paper submission	01 Apr 2025
Notification	01 Jun 2025

Software and Systems Modeling



Theme Section: Modeling for Simulation

Simulation is among the typical activities that make use of models as simulation is a particularly apt method to investigate system behavior when numerical methods are cumbersome or unfeasible. Since the early 2000s, the role of simulators has shifted from the design phase of systems to their run-time phase, as simulators have become first-class components in today's complex systems. The widespread adoption of advanced digital technology—most notably, digital twins, virtual and augmented reality—elevated the capabilities and quality of simulators to new levels. Currently engineered simulators are characterized by high fidelity and insightfulness, and are enablers of complex cyber-physical technology.

However, the engineering of simulators often lacks a systematic approach, leading to cumbersome validation, verification, testing, and reuse of simulation components. Model-driven engineering (MDE) offers proven methods for constructing complex software by the creation of high-level, abstract models that can be automatically transformed into executable simulations, reducing development time and errors. Since the investigation of the synergies between MDE and simulator/simulation technology is still missing, it is high time to explore how MDE can contribute to more systematic, robust, and scalable methods of simulator and simulation engineering.

To this end, the [Journal of Software and Systems Modeling](#) (SoSyM) prepares a theme section on “Modeling for Simulation” and invites high-quality submissions covering topics including but not limited to

- Model-driven engineering (MDE) for simulator engineering
 - MDE for architectures and components of simulators, simulation algorithms, and protocols
 - Consistency and model checking of simulation models
 - MDE for V&V, certification, and assurance of simulators
 - Traceability between simulation, models, and runtime data
- Domain-specific languages (DSLs) for simulators
- Simulation model management and simulator lifecycle engineering
- Models@run.time and model-driven (co-)simulation
- Integration of modeling&simulation tools and tool chains
- Application of new and emerging technologies, e.g., AI simulation, virtual commissioning, digital twins
- Empirical inquiries, systematic surveys, tool evaluations
- Industry reports, case studies, frameworks, and tools

General Author Information

- Papers must be written in a scientifically rigorous manner with adequate references to related work.
- Submitted papers must not be simultaneously submitted in an extended form or in a shortened form to other journals or conferences. It is however possible to submit extended versions of previously published work if less than 75% of the content already appeared in a non-journal publication, or less than 40% in a journal publication. Please see the [SoSyM Policy Statement on Plagiarism](#) for further conditions.
- Submitted papers do not need to adhere to a particular format or page limit, but should be prepared using font “Times New Roman” with a font size no smaller than 11 pt, and with 1.5 line spacing. Please consult the [SoSyM author information for submitting papers](#).
- Each paper will be reviewed by at least three reviewers.

Making a submission

- Communicate your intent to submit a paper by emailing the theme section editors the following information before the Intent to Submit deadline:
Title, Authors, and an Abstract.
- Possible submission formats are:
 - PDF (saved as readable in version 5.0 or earlier) – preferred
 - Word (.doc, without macros)
 - Rich Text Format (.rtf)
- Submit your work using the online submission system [manuscript central](#):
 - In step 1, select “Theme Section Paper” as the manuscript type.
 - In step 5, make sure field “Cover Letter” includes the line: “Submission for Theme Section on Modeling for Simulation”.

Further information

If you have any questions or require additional information about this theme section, please contact the editors.